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Evaluation Of The Letter Mail
Code Sort System Prototype
In Cincinnati, Ohio

B-114874

United States Postal Service

**UNITED STATES
GENERAL ACCOUNTING OFFICE**

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NOV. 8, 1972



UNITED STATES GENERAL ACCOUNTING OFFICE

WASHINGTON, D.C. 20548

GENERAL GOVERNMENT
DIVISION

B-114874

Dear Mr. Postmaster General:

The General Accounting Office has examined the operation and testing of the Letter Mail Code Sort System (LMCSS) prototype at the Cincinnati Post Office and the Postal Service's plans for acquiring this equipment for use in the Preferential Mail System. The primary objective of our work was to obtain assurance that the Postal Service was not contracting for the production of new and advanced equipment before successfully demonstrating it. p. 1880 62

Our review showed that

- a complete LMCSS had not yet been installed or tested,
- the partial LMCSS was not meeting Postal Service performance standards, and
- the partial LMCSS was more costly than the existing letter mail sorting system.

We brought these matters to your attention in a letter dated March 31, 1972, pointing out the implications of this situation on the Postal Service's procurement plans. By letter dated May 18, 1972, the Senior Assistant Postmaster General, Mail Processing Group, informed us that the Postal Service recognized the need for satisfactory demonstration of the equipment and system prior to making a major capital investment. He stated that expansion of LMCSS had been delayed pending such a demonstration.

In view of the Postal Service's recognition of the problem, we have no recommendations. Consistent with our recent discussion, this report was prepared for the purpose of making our findings a matter of record and of keeping you informed on the results of our work.

BACKGROUND

By 1978, the Postal Service plans to establish 179 Preferential Mail Centers in strategically located, large-volume postal facilities throughout the United States. These centers will be specifically designed and equipped to accommodate LMCSS equipment for processing mail. The plans provide that LMCSS equipment will be procured for installation in four Preferential Mail Centers in the near future. The total cost of the equipment at these locations is not known. However, Postal Service officials advised us that the estimated cost of the LMCSS equipment for one site would be about \$7.1 million.

Current mail-processing systems rely on the read-sort method, which may be either a manual or a combination manual-machine operation. In the manual operation, a mail distribution clerk reads the address on the envelope and then places the letter in the proper destination bin. In the manual-machine operation, a console-type machine--the Letter Sorting Machine/ZIP Mail Translator (LSM/ZMT)--automatically places a letter in position for a clerk to read the address. He then keypunches an address code into the machine which mechanically places the letter in the destination bin indicated by the code. In both operations the address on the envelope is read each time the letter is sorted until final distribution. The number of times each letter is sorted depends on a number of factors, but normally averages about 3.5 times a letter.

LMCSS uses the code-sort method, in which the address on a letter is translated into a machine-readable code that is printed on the envelope. Imprinting a machine-readable code on the letter the first time the address is read allows the letter to be sorted by machines during all subsequent sorts. The Postal Service states that use of LMCSS will reduce mail-processing costs by about \$1 billion a year. This cost reduction was estimated through the use of computerized cost models which, of necessity at that time, included a number of assumptions and data estimates.

STATUS OF PROTOTYPE SYSTEM

Our review indicated that, because of slippages in scheduled deliveries, a number of pieces of equipment had not yet been installed and tested in the LMCSS prototype at the Cincinnati Post Office and that this would not be accomplished for a number of months. The Postal Service's stated objective is to fully test all new equipment and advanced systems concepts in the "live mail" environment at Cincinnati before implementation is attempted at other facilities.

Listed below are the scheduled dates of delivery and integration into the prototype for the pieces of equipment which were not operational as of August 15, 1972.

<u>Equipment</u>	<u>Scheduled dates</u>	
	<u>Delivery in Cincinnati</u>	<u>Integration into prototype</u>
Code Sort Optical		
Character Reader	2-14-72 ^a	(b)
Carrier Sequencer	7-15-72 ^a	10-15-72
Letter Sorting Machine No.2	9-15-72	12-15-72
Integrated Mail Preparation		
Line	9- 1-72	12-15-72
Precoded Originating Mail		
Processor	9- 5-72	9-30-72

^aActual delivery date.

^bTo be completed in four phases: phase I completed 6-28-72; phase II scheduled for 9-28-72; phase III and IV--no scheduled date.

Until these pieces of equipment have been completely installed and tested and then integrated into the LMCSS prototype, the Postal Service will have no objective basis on which to evaluate the performance of LMCSS as a complete system. Postal Service officials told us that the operational results of the total system had been estimated through the use of simulation models. Although these models are important

management tools, they are based on a number of assumptions and data estimates. We believe that testing a complete LMCSS prototype and obtaining actual performance data is of extreme importance because our review indicated that none of the performance standards established for the installed LMCSS equipment had been consistently met.

During the period January 3 through March 21, 1972, the actual production results for the partial LMCSS then in operation were significantly below target standards.

The Senior Assistant Postmaster General, Mail Processing, in his letter of May 18, 1972, told us that these target standards, which were contractually imposed on the system integrator, were higher than the projected production results which were used as a basis for the Postal Service's economic analysis of the system. The table below shows the production results achieved by the partial LMCSS, the target standards imposed on the system integrator, and the projected production results used as a basis for the Postal Service's economic analysis.

	Actual results (<u>note a</u>)	Integrator's target <u>standards</u>	Economic analysis <u>projection</u>
Productivity (number of letters per man-hour)	742	994	867
Sorting accuracy rate	67.0%	88.7%	91.7%
Adjusted productivity (number of letters per man-hour)	497	882	795

^aThese statistics are based on a mix of 33.5-percent incoming and 66.5-percent outgoing letter mail processed through the LMCSS prototype during the period January 3 through March 21, 1972.

As shown above, the actual production results were significantly lower than the projected results on which the economic analysis was based.

TOTAL SYSTEM COST

The Postal Service makes a daily comparison of the direct labor cost associated with the LMCSS operation with the estimated direct labor cost of handling the same type of mail in the existing LSM/ZMT system in the Cincinnati Post Office. During the period June 26, 1971, through March 3, 1972, the cost comparisons showed that LMCSS was saving \$0.39 per 1,000 letters in direct labor cost. The Postal Service did not, however, compare equipment-related costs, such as maintenance and depreciation.

The additional maintenance costs attributable to LMCSS were substantial and more than offset the estimated savings in direct labor cost. The maintenance costs on the LMCSS prototype during the period June 26, 1971, through March 3, 1972, averaged \$1.63 per 1,000 letters, whereas maintenance costs on the LSM/ZMT system averaged \$0.43 per 1,000 letters, a difference of \$1.20 per 1,000 letters.

The Senior Assistant Postmaster General, Mail Processing, told us that the Postal Service expected the maintenance cost for "first of a kind" equipment prototypes with a large number of engineering changes to be higher than the maintenance costs associated with the existing system. He agreed, however, that LMCSS, when fully operational, would still entail higher maintenance costs than the present system.

LMCSS involves a significant amount of sophisticated equipment, and the equipment-related costs will have a substantial effect of any estimated cost savings. Adding these equipment-related costs to the direct labor costs will permit a more meaningful comparison of actual LMCSS cost data with that developed as part of the economic analysis of the system to ascertain whether there are any significant variances.

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We shall be pleased to discuss these matters with you or your staff. We wish to express our appreciation for the co-operation given our representatives during this review.

Sincerely yours,

Victor L. Lowe

Director
General Government Division

The Honorable
The Postmaster General *52*

Copies of this report are available from the U. S. General Accounting Office, Room 6417, 441 G Street, N W., Washington, D.C., 20548.

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